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In late December 1954, the following information was obtained at the annual conference of the H.H.I. on the status of research work on soler rediation:

Except for individual missions, Department III of the H.H.I. will no longer participate in the radio-astronomic research work of the Institute.

In late August 1954, the following was a conference between Array Fuerstenberg, Schmidt and Farnik on the one side, and Dr. Jung on the other:

- Status of research work in-late August 1954: The 20-cm installation without switch has been dismantled for use with a second installation to be equipped with with One 20-cm installation with switch was in operation; the installation showed fluctuations in its sensitivity. A second 20-cm installation was under construction. Completed were the cscillator, the noise generator, the mixer stage, the first and second intermediate frequency stages, the audio frequency, emplifier, the switching stage, and the regulating stage. Under construction were the switch and the power supply unit with rack. The 3-cm installation has been dismantled.
- (2) Plans for the next phase of research work: Pagular observations of the effects of solar madiation were to be begun with the first completed 20-cm installation with switch. After completion of the second 20-cm installation, the first installation of this type was to be sent to Neustrelitz. The second 20-cm installation with switch was to be tested by means of the large reflector, both with and without regulating stage. The 3-cm installation was to be reassombled in its provious switching autangement and was to serve as an operating model.
- (3) Organization of works The 20-cm installations were assembled under the direction of Florestenberg. In charge of technical matters were Florestenberg, Prinzler and Bierhals. The second installation was being built at the workshop of the H.H.I. The switching arrangement was supervised by Bierhals; responsible for the balancing was Prinzler, while Beier and Dr. Hollvow were charged with the construction and testing of switches. The completed installation was to be tested under the supervision of Fuerstenberg and Dr. Hollvow. The 3-cm installation was to be reassembled under the supervision

of Farnik. It was planned to modify the switches, the oscillator, and the first intermediate frequency stage all of initiated by Lande and the workshop of the Institute to procure non-carroding material for these units. The construction of a second intermediate frequency stage with oscillator and mixed stage was completed by the schmidt in late 1954. The audio frequency unit and the switching whit with time constant was completed in the workshop of the Institute in late 1954. Work on the switching and balancing units by tree Bierhals and the construction of the d.c. amplifier and the wavenater by residential were also completed by late 1954. The sains unit for the klystron for which the drawings had been delivered by the radio engineering plant at Keependek, were being built at the workshop of the Institute, while the electronically

etabilized mains unit required for the other units of was being built by the firm of Wachs and Klein e and Schmidt.

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3é.	Other	plans made in August 1954 envisaged the following activities:	
	(1)	Reconstruction of the gear unit for the reflector drive by real.	
	(2)	Removal of any slack from the gear box at the reflector by	~
	(3)	Construction of an accurate adjusting scale for the coupling unit by nerroll Lucde and Fuerstenberg.	:
#    M	(4)	Improvement of the follower stage by Therstenberg.	
	(5)	Unification in the set-up of the installation beginning with the first intermediate frequency stage. This problem was to be solved by a study group composed of representatives of Departments II, III and IV of the Institute.	•
/	(6)	Dovolopment of testing procedures and the building of measuring dovices for the whole installation.	
ntec	(7)	Work on the first suitable detectors. The detectors proviously the best to be the first fuer formed deveses, were to be the first fuer between the first fuer beautiful former braining of the manufacture of the first fuer fuer first	3
·.	(8)	Absolute calibration; Dr. Mollvou worked on this problem. Of these plans, project item (4) was completed by late 1954; work on projects items (1) and (2) was still in progress, and projects items (3) and (5) through (8) were included in the 1955 work progress of the solar radiation research group.	
e		The construction of new sets designed for vewe lengths of 10 and 50 cm was not envisaged. All those involved in solar rediction work wanted to have a leader appointed who was sutherized to decisions in the event that the chief of the Institute was not excitable. The main function of this leader was to be the coordinatin of all research work, the procurement of laboratory equipment, and the planning and control of the budget allocated for this project.	
4.	Plans the sin-King vino. An	insufficiently prepared for its work. On 15 May 1954,  throws inspected the preparations for the empediti  he left again rather disappointed. On 27 May, the equipment required the solar measurements was sent to Ruegen Island. The observations  made from a point some km south of the ionosphere measuring station  and the solar measurements was sent to Ruegen Island. The observations  made from a point some km south of the ionosphere measuring station  and the left again rather disappointed. On 27 May, the equipment required the solar measurements was sent to Ruegen Island. The four measuring station  and the left again rather disappointed the continual of the solar point some km south of the ionosphere measuring station  and the left again rather disappointed the continual of the solar point in the solar collipse were hampered	25X1  cn, 25X1
	by go	The registrations made during the solar collipse were hampered cor visibility; moreover, the curves obtained should irregulatied to a failure of the electric clockwork. The installation was mitted in late July and shipped to Weustidita. Cally the insurphose	

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station which was occupied by three or four men remained on Ruegen Island.

The first 3-cm installation was completed on time. The amplification factor and the band width had been determined by : nerrel Farnick, Schmidt, and Handow at the Koepenick radio engineering plant, because the meniuring installation required were not available at the H.H.I. The intonnediate frequency amplifier developed by the School should some defects which could not be eliminated. The mains frequency for the rotating mechanism furnished by the firm of Zeins was not constant enough and batteries were employed instead. The 3-cm installation was ready for oberation at Adlershof one day before the color eclipse. It worked without any failure. The reflector could be attroptically. The electric control device also worked great initial difficulties. The remote controlled gent had to have on accuracy of alignment of up to 0.60. The curves registered were faulthess. The second 20-cm installation which was completed in a makeshift way was also used in connection with the large reflector at Adlershof. The curves obtained with the help of the 20-cm and 3-cm installations agreed with each other rather well. On 6 July; Professor Hachenberg stated that he was well satisfied with the results obtained at Adlorshof.

In early October 1954, a five-stage intermediate frequency amplifier for 50 megacycles per second developed by real Schmidt was put into used. The equipment had a band width of 55.5 to 61.5 megacycles per second, and brought about a magnification from 1 millivoltinput to 1.4 Volt output with a noise voltage of less than 0.5 Volt.

In early June 1954, a wooden observation tower recting on a concrete base was erected between Altenkirchen and Juliuszuch for the H.H.I. Chief of the station was the Dr. Dittmar. By his order, the electric light was cut off at Juliuszuch, Breege, and Altenkirchen on the day of the solar colipse in order to make his measurements independent of fluctuations in the electric mains. The station remained occupied after the solar eclipse.

The Moteorologisch-Hydrologischer Dienst (Meteorologisch and Service) (MHD) sent an expedition of 22 men observation of the solar eclipse. The expedition was equipped with modern by apparatur built by the Zeiss firm but was unable to make any photographs because the sky was completely overcast during the eclipse.

An investigation was subsequently started against those who were responsible for the expedition in the USSR had invited the HID to send an expedition to the USSR. Inasmuch as

In order to study the propagation of VHT waves in the troposphere, a testing line about 70 km long was established between Adjershof and Ftenfeichen. The transmitter which had an output of 50 watts was set up in the area of the Institute at Adlershof. The directional entenna fitted with three rows of dipoles designed for the frequencies of 40 megacycles per second, 62 or 68 megacycles per second, and 104 megacycles per second respectively was on the roof of the former long-diptence heating plant of the former German Aeronautical Test Institute. Each row of dipoles consisted of four vertical dipoles each consisting of one reflector and one director. The bean width was about 30°, and the antenna gain was fourfold. The Capalea were fed in a parallel way via a 70-ohm cable and matching pote. The Ruesche Berge (a chain of hills) located on the testing line did not have any disturbing 25X1

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effect. No relay station was erected on the Mueggelberge Hills as originally planned, because the connection between Adlarshof and Fuenfeichen proved to be good. The Lange was in charge of the measurements concerned with the propagation of radio waves. Prior to October 1954, no results of the observations made had been published.

10.

In October 1954, the construction of modern housing units was planned for the branch installations of the H.H.IL at Juliusruh on Ruegen Island, Neustrolitz, Kuchlungsborn, and Fuenfeichen.

1.25 cm

In 1954, Dr. Pranmarer experimented with two magnotron tubes designed for wave length of the land of cm at the Department for Super High Frequency Techniques. The greatest difficulties were experienced in the field of cathodes. Between August and November 1954, 20 different cathodes were tested. At first the standard paste for radio tubes was used, later a special paste made at the Institute was applied. The work was delayed, because the high-frequency generator of the Institute was not completed. The cathodes had therefore to be taken to the Werk fuer Fornmeldewosen. (Signal Communication Engineering Plant). The 3-cm tube was to be used as a model for the investigation of the mechanical arrangement, especially of the cathode. In carrly November, whom the tube was given an impulse of 7 KW, it was made to oscillate for the first time and had a life time of two days. Another such tube was in operation for several days in November. It was made to escillate over then its vacuum was rather poor. The cathode paste developed proved usable. Impulse effects of 80 KW and, with an improved cathode, even such of 400 KW were reached in accordance with values calculated theoretically, The tests showed that the diameter of the cathodo was a critical factor for the build-up period (starting of the oscillating process). Thereupon the diameter of the 12.25 menetrons was reduced from 6 to 5 mm. After that reduction the tube could be made to escillate.

V1.25 cm

12. Dr. Frammare states that he had succeded, while he was in the USSR, in cillater to the state of the last tren tubes designed for a wave length of 1.25 tem. He admitted however, that conditions for experimenting had been much more favorable there than in the GDR. The first samples of the 1.25 a tubes suffered from flash-overs between anode and cathode, probably due to a defective vacuum and inadequate mechanical arrangement of the cathode. The assembly of one tube lasted one day. In late November, the flash-overs were eliminated for the first time, and in early December, the tube was repeatedly made to oscillate for a short

early December, the tube was repeatedly made to oscillate for a short time. Subsequently, the tube was subjected to a continuous test extending over three days. The tube was switched off for a short while, after that it was again brought to oscillation. At the end of the experiment, the output of the tube decreased, occuse scattering effects occurred in the cathode. The tube was then disassembled and checked. Its output was estimatedby means of a water calorimeter.

In order to improve the high vocuum and make possible an easy exchange of the cathodes, soldering was abandoned for sealing purposes in December 1954, and a cylinder fitted with two conical slides was used instead. At a satisfactory vacuum was not achieved, however and for mass production the set up of the cathode was not stable enough. In spite of this fact,

it appears that the right way had been chosen.

1.2 cm

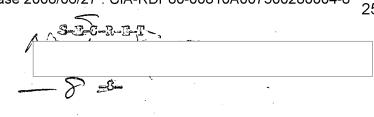
because he was entirely abached to the development of the magnetron. On the other hand, the Hietner, who was corolled for Hachenberg, was working on a paper related to problems of hemiconductors 25X1

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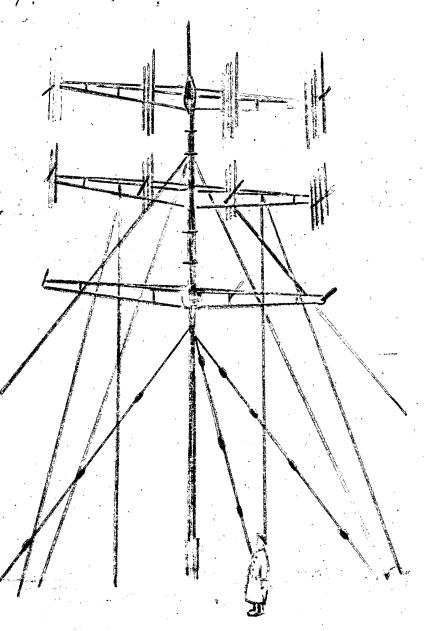
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V	Since August 1954, Flietner had been assisted by a sturbust (fine a sturbustant Both of them have been ordered to the transium monocryst	dent from
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14.	Prior to late 1954, Dr. Jung developed a set designed to measure the	)
	thickness and depth of salt layers. Since early 1955, Dr. Jung has uon the development of a set designed to determine the location of iro	rorked -
	perficies avallowed by animals.	
	In October 1954, Dipl. Inc. Kaszinski continued the research work be	gun by
	Schustomenn in the field rey generators. Although Kaszinski	is
	no cutstanding results are to expected from his work.	d so
	the control of the co	(a)
15.	In 1954, staff workers at the H. M	
	Dr. Presmaror, Dr. Jung, Dr. Reinhard Control of the The	<u>a</u>
. //	spokesman of the group was Dr. Prexistran. The opposition believes th	.at
	Hackenberg is only a second-rate coloutist and does not have the	
	group enberg for having propaged the expedition for	this ·
X	observe in an in the way. The	25)
agrio	observ ar eclipse in an in to way. The opposit ists of technical physicists are nainly in protein and the particular and the protein are the protein and the protein are the p	nterested
	is main a problems, above all in problems	end. of only
	astronomy and semiconductors. Hechemberg's plans did not wit in with	tle
	missions assigned to the H.H.I. In view of those plans, he did mot d	how
**	much interest in the work done by Dr. Reinhardt and Dr. France or other hand, he relied heavily on Dr. Jung who assisted him in the	a the
	dovelopment of receivers required for the registration of solar rays	in
	the wave ranges of 1.25, 3, 10, 20, 50 and 200 cm.	
16.	On 33 Southarder 1054 three Humanian most	
. 209	On 13 September 1954, three Hungarian professors accompanied by Dr. from the Doutsche Akademie der Wissenschaften (German Academ) of Soil	ortorn Sages)
	and Hungarian interpretor visited the R.F. N. Dr. Jung and most than	nomenn
1 Dec	showed the guests, who were probably university professor for five hours. The Hungarians were greatly interested in	Part trees
	They subsequently visited the Optical Institute and the The	Crystel
•	inference of behigher, three brondsone of bulgios of the es	149v
•	visited the Institute. They wanted to discuss problems of so	25X1
	and somiconductors with Professor Machenberg, who was absented following day, the (Czechoslovaks were shown the Institute by	
		25X1
17.	Dr. Eschenberg, Dr. Jung, Dr. Rebenherst and Dr. Reinburdt attended	tne /
	conference of physicists During the conference Professor Schuetz of Jona University offered a provious a	118 Rosistent
	of his sprofessorship in Jame. The phys	sicist .
	conference con problems related to semic	conductors
10	of the Institute for Research of Solid Decies in Buch. On 15 Becember	r. Nokerat r 1954.
1 1	Dr. Hueter was unexpectedly given notice of dis	echarge
1. W	effective warry 1955. This procedure was resented by all members	o£ 25X1
M	the Instance including Professor Hachenberg, who stated that he had rebeen in the local first intended dismissel. In Nov	IOS OFVA
1	gradua	25X1
<i>y</i> .	to the H. for work in Dr. Jung's department. Godd	
• 1	member and is said to have been sent of the Institute	
	Control Condittee. Professor Hackenberg protested I	Hy tr
•	which Code was transferred to the Institute without approval.	Control of the contro
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Annote 1 × /.



Directional Antenna for the Ultra Short 25X1 Have Experimental Circuit at Adlerator Directional antenna tos de Experimental

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COUNTRY	East Germany	DATE DISTR.	eptember 1955
SUBJECT	Heinrich Hertz Institute	NO. OF PAGES	9
	Research Activities		25X1
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By early Jahuary Et the depart Institute (H.H.I.) at Berlin-Adlershof had recovered to especial orders which were subdivided into four round

Group I: This group concerns the measurement of the propagation of VHF waves under the direction of Dr. Schuenemann, the deputy to Professor Richard Schachemmaier and the real chief of Department II of the H.H.I. The first order of this group concerns measurements in the propagation of vaves between Adleration and Fuenteichen, where comprehensive data of observation were obtained in 1954. These data are to be evaluated statistically in 1955. Moreover, in 1955, the reception of a 9-cm wave transmitter located at Fuenteichen is to be tested by a receiver located at Adlershof. The transmitter is equipped with a disc triode and has an output of only one watt. The second order included in this group concerns measurements in the propagation of waves in the 3 to 9-cm range, exceeding normal ranges. Moreover, the reception of West German radio stations operating on VHF from distances of 500 km and more is to be observed.

Group II: This group concerns itself with ionospheric research.

Work assigned to this group will be supervised by one Dittmar (fnu).

Orders received concern the measurement of ware length limits

(Grenzwellenlæengen) and the damping of these waves. A transmitter

continuously varying its frequencies for measurements to be made in
the ionosphere is scheduled to be set up at Juliusruh on Fuegen
Island.

Group III: Magnetic measurements. This research work is scheduled to be headed by Vollandt (fnu) at Neustrditz.

Group IV: This gamp concerns research work on solar radiatica. The group will work under Professor Otto Hachenberg, chief of the fl.d.i. The individual research missions assigned to this group were discussed in late 1954.

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- 2. In late December 1954, the following information was obtained at the annual conference of the H.H.I. on the status of research work on solar radiation:
  - a. Except for individual missions. Department III of the H.H.I. will no longer participate in the radio astronomic research work of the Institute.
  - b. In late August 1954, the following was decided at a conference between Fuerstenberg, Schmidt and Farnik on the one side, and Dr. Jung on the other:
    - (1) Status of research work in late August 1954:

      The 20-cm installation without a switch has been dismantled for use with a second installation to be equipped with a switch.

      One 20-cm installation with switch was in operation; the installation showed fluctuations in its sensitivity. A second 20-cm installation was under construction. Completed were the oscillator, the noise generator, the mixer stage, the first and second intermediate frequency stages, the audio frequency amplifier, the switching stage, and the regulating stage. Under construction were the switch and the power supply unit with rack.

      The 3-cm installation has been dismantled.
    - Plans for the next phase of research work:
      Regular observations of the effects of solar radiation were
      to be begun with the first completed 20-cm installation with
      switch. After completion of the second 20-cm installation, the
      first installation of this type was to be sent to Neustrelitz.
      The second 20-cm installation with switch was to be tested by
      means of the large reflector, both with and without regulating
      stage.

The 3-cm installation was to be reassembled in its previous switching arrangement and was to serve as an operating model.

(3) Organization of works

The 20-cm installations were assembled under the direction of Fuerstenberg, In charge of technical matters were Fuerstenberg, Prinzler and Bierhals.

The second installation was being built at the workshop of the H.H.I. The switching arrangement was supervised by Bierhals; responsible for the balancing was Prinzler, while Beier and Dr. Mollvow were charged with the construction and testing of switches. The completed installation was to be tested under the supervision of Fuerstenberg and Dr. Mollvow.

The 3-cm installation was to be reassembled under the supervision of Farnik. It was planned to modify the witches, the oscillator, the mixer stage and the first intermediate frequency stage; all of these units were arranged in a box near the reflector. Efforts had been initiated by Luede and the workshop of the Institute to procure non-corroding material for these units.

The construction of a second intermediate frequency stage with oscillator and mixer stage was completed by Schmidt in late 1954. The audio frequency unit and the switching unit with time constant was completed in the workshop of the Institute in late 1954. Work on the switching and balancing units by Bierhals and the construction of the d.c. amplifier and the wavemeter by

Schmidt were also completed by late 1954.

The mains unit for the klystron for which the drawings had been delivered by the radio engineering plant at Koepenick, were being built at the workshop of the Institute, while the electronically stabilized mains unit required for the other units of the installation was being built by the firm of Wachs and Klein according to plans made by Lueda and Schmidt.

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- 3. Other plans made in August 1954 envisaged the following activities:
  - (i) Reconstruction of the gear unit for the reflector drive by Lucde.
  - (2) Removal of any slack from the gear box at the reflector by Luede.
  - (3) Construction of an accurate adjusting scale for the coupling unit by Luede and Fuerstenberg.
  - (A) Improvement of the follower stage by Fuerstenberg.
  - (5) Unification in the set-up of the installation beginning with the first intermediate frequency stage. This problem was to be solved by a study group composed of representatives of Departmentall, III and IV of the Institute.
  - (6) Development of testing procedures and the building of measuring devices for the whole installation.
  - (7) Work on the problem of the most suitable detectors. The detectors previously used, which had been built by the Werk fuer Fernmeldewesen, were to be replaced by detectors developed by the Work fuer Bauelemente der Nachrichtentechnik, the former Dralowid Works. The manufacture and gauging of detectors for ave lengths of 1 cm and less is also to be considered.
  - (8) Absolute calibration; Dr. Mollvow worked on this problem. Of these plans, project item (4) was completed by late 1954; work on projects items (1) and (2) was still in progress, and projects items (3) and (5) through (8) were included in the 1955 work program of the solar radiation research group.

The construction of new sets designed for wave lengths of 10 and 50 cm was not envisaged. All those involved in solar radiation research work wanted to have a leader a pointed who was authorized to make decisions in the event that the chief of the Institute was not available. The main function of this leader was to be the coordinating of all research work, the procurement of laboratory equipment, and the planning and control of the budget allocated for this project. 2544

	of all research work, the procurement of laboratory equipment, and the planning and control of the budget silocated for this project. 25X1
4.0	Solar observations.  Plans to send an expedition of the M.H.I
,	an astronomer inspected the preparations for the expedition, but he left again rather disappointed. On 27 May, the equipment required for the solar measurements was sent to Ruegen Island. The observations were made from a point some km south of the ionosphere measuring station selected by Ing. Dittrar in the bay of Tromper Wiek, not far from Cape Arkons, in early June 1954. A mast 30 meters high had been erected there. In early June, Professor Machenberg supervised the arrival of the first 20-cm station built at the H.H.I. The four-meter reflector arrived on 16 June. The registrations made during the solar eclipse were hampered by poor visibility; moreover, the curves obtained showed irregulaties owing to a failure of the electric clockwork. The installation was
	dismantled in late July and shipped to Neustraits. Only the tonosphere

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station which was occupied by three or four men remained on Ruegen Island.

- The first 3-cm installation was completed on time. The amplification factor and the band width had been determined by Schmidt, and Handow at the Koepenick radio engineering plant. because the measuring installation required were not available at the H.H.I. The intermediate frequency amplifier developed by Schmidt showed some defects which could not be eliminated. The mains frequency for the rotating mechanism furnished by the firm of Zeiss was not constant enough and batteries were employed instead. The 3-cm installation was ready for operation at Adlershof one day before the solar eclipse. It worked without any failure. The reflector could be set optically. The electric control device also worked satisfactorily in spite of great initial difficulties. The remote-controlled gear had to have an accuracy of alignment of up to 0.60. The curves registered were faultless. The second 20-cm installation which was completed in a makeshift way was also used in connection with the large reflector at Adlershof. The curves obtained with the help of the 20-cm and 3-cm installations agreed with each other rather well. On 6 July, Professor Hachenberg stated that he was well satisfied with the results obtained at Adlershof.
- 6. In early October 1954, a five-stage intermediate frequency amplifier for 60 megacycles per second developed by Schmidt was put into use .

  The equipment had a band width of 55.5 to 61.5 megacycles per second, and brought about a magnification from 1 millivoltinput to 1.4 Volt output with a noise voltage of less than 0.5 Volt.
- 7. In early June 1954, a wooden observation tower resting on a concrete base was erected between Altenkirchen and Juliusruh for the H.H.I. Chief of the station was Dr. Dittmar. By his order, the electric light was cut off at Juliusruh, Breege, and Altenkirchen on the day of the solar eclipse in order to make his measurements independent of fluctuations in the electric mains. The station remained occupied after the solar eclipse.

An investigation was subsequently started against those who were responsible for the expedition inasmuch as the USSR had invited the MHD to send an expedition to the USSR.

In order to study the propagation of VHF waves in the troposphere a testing line about 70 km long was established between Adlershof and Fuenfeichen. The transmitter which had an output of 50 watts was set up in the area of the Institute at Adlershof. The directional antenna fitted with three rows of dipoles designed for the frequencies of 40 megacycles per second, 62 or 68 megacycles per second, and 104 megacycles per second respectively was on the roof of the former long-distance heating plant of the former German Aeronautical Test Institute. Leach row of dipoles consisted of four vertical dipoles each consisting of one reflector and one director. The beam width was about 30°, and the antenna gain was fourfold. The dipoles were fed in a parallel way via a 70-ohm cable and matching pots. The Rauesche Berge (a chain of hills) located on the testing line did not have any disturbing

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effect. No relay station was erected on the Mueggelberge Hills as originally planned, because the connection between Adlershof and Fuenfeichen proved to be good. Lange was in charge of the measurements concerned with the propagation of radio waves. Prior to October 1954, no results of the observations made had been published.

- 10. In October 1954, the construction of modern housing units was planned for the branch installations of the H.H.I. at Juliusruh on Ruegen Island, Neustrelitz, Kuehlungsborn, and Fuenfeichen.
- 11. In 1954, Dr. Praxmarer experimented with two magnetron tubes designed for wave length of 1.25 cm and 3 cm at the Department for Super High Frequency Techniques. The greatest difficulties were experienced in the field of cathodes. Between August and November 1954, 20 different cathodes were tested. At first the standard paste for radio tubes was used, later a special paste made at the Institute was applied. The work was delayed, because the high-frequency generator of the Institute was not completed. The cathodes had therefore to be taken to the Werk fuer Fernmeldewesen. (Signal Communication Engineering Plant). The 3-cm tube was to be used as a model for the investigation of the mechanical arrangement, especially of the cathode. In early November, when the tube was given an impulse of 7 KW, it was made to oscillate for the first time and had a life time of two days. Another such tube was in operation for several days in November. It was made to oscillate even when its vacuum was rather poor. The cathode paste developed proved usable. Impulse effects of 80 KW and, with an improved cathode, even such of 400 KW were reached in accordance with values calculated theoretically. The tests showed that the diameter of the cathode was a critical factor for the build-up period (starting of the oscillating process). Thereupon the diameter of the 1.25 cm magnetrons was reduced from 6 to 5 mm. After that reduction the tube could be made to oscillate.
- 12. Dr. Praxmarer stated that he had succeded, while he was in the USSR, in cousing the oscillation of magnetron tubes designed for a wave length of 1.25 cm. Te admitted, however, that conditions for experimenting had been much more favorable there than in the GDR.<sup>2</sup> The first samples of the 1.25 cm tubes suffered from flash-overs between anode and cathode, probably due to a defective vacuum and inadequate mechanical arrangement of the cathode. The assembly of one tube lasted one day. In late November, the flash-overs were eliminated for the first time, and in early December, the tube was repeatedly made to oscillate for a short time. Subsequently, the tube was subjected to a continuous test extending over three days. The tube was switched off for a short while, after that it was again brought to oscillation. At the end of the experiment, the output of the tube decreased, because scattering effects occurred in the cathode. The tube was then disassembled and checked. Its output was estimated by means of a water calorimeter. In order to improve the high vacuum and make possible an easy exchange of the cathodes, soldering was abandoned for sealing purposes in December 1954, and a cylinder fitted with two conical slides was used instead. A satisfactory vacuum was not achieved, however and for mass production the set up of the cathode was not stable enough. In spite of this fact, it appears that the right way had been chosen.
- Praxmarer cannot possibly have worked on crystal problems in 1954, because he was entirely absorbed in the development of the 1.25 cm magnetron. On the other hand, Flietner, who was coached by Professor Hachenberg, was working on a paper related to problems of semiconductors.

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	Since August 19 Potsdam. Both	254, Flietner has been assisted by Insert (fmu), a strong them have been ordered to grow germanium monocrys	ident from Itals:
140	thickness and on the developmenticles swall In October 1956 Schwenemann in believed to be	1954, Dr. Jung developed a set designed to measure the lepth of salt layers. Since early 1955, Dr. Jung has ment of a set designed to determine the location of traced by animals.  4. Dipl. Ing. Kaszinski continued the research work to the field of sound ray generators. Although Kaszinski a capable man, he does not have original ideas; results are to be expected from his work.	worked con egun by
15.	Hachenberg, the Dr. Praxmarer, spokesman of the Hachenberg is equalifications group also blan observation of opposition in problems of is mainly interestronomy and missions assignanch interestrother hand, he development of	workers at the H.H.I. who were in opposition to Profe chief of the Institute.  Dr. Jung, Dr. Reinhardt, and chief engineer Feik. The group was Dr. Praxmarer. The opposition believes toonly a second-rate scientist and does not have the required for a chief of the Institute. The members of the solar eclipss in an inadequate way. The consists of technical physicists, who are mainly technology, while Hachenberg comes from a university rested in theoretical problems, above all in problems semiconductors. Hachenberg's plans did not fit in white ned to the H.H.I. In view of these plans, he did not in the work done by Dr. Reinhardt and Dr. Praxmarer. relied heavily on Dr. Jung who assisted him in the receivers required for the registration of solar rays of 1.25, 3, 10, 20, 50 and 200 cm.	ted the chat contact the chat contact
16.	from the Deuts and Hungarian showed the gue for five hours They subsequen Physics. On 3 visited the In and semiconduc	r 1954, three Hungarian professors accompanied by Dr. che Akademie der Wissenschaften (German Academy of Scinterpreter visited the H.H.I. Dr. Jung and Schusts, who were probably university professors, around a The Hungarians were greatly interested in solar restly visited the Cptical Institute and the Institute September, three professors of physics of Prague Universitute. They wanted to discuss problems of solar restors with Professor Hachenberg, who was absent. On the Czechoslovaks were shown the Institute by	ciences)  lenemenn  the Institute  search  of Crystal  versity  search
17.	conference of conference, Prof his flatly refused of the Institute, her informed graduate physicist member and is Central Common Central Common Central Common Central Common Central Common Central Common Common Central Common Common Central C	physicists During offered a previous a professor Schuetz of Jena University offered a previous a professorship in Jena. The physicists a professorship in Jena. The physicists a professorship in Jena. The physicists was attended by Wallis, who is subordinate to te for Research on Solid Bodies in Buch. On 15 December was unexpectedly given notize of a nearly 1955. This procedure was resented by all member including Professor Hachenberg, who stated that he has of Huets: Is intended dismissal. In November 1954, Godicist, was intended di	this s assistant hysicist miconductors Dr. Eckardt ter 1954 discharge rs of 25X1 d not de, a25X1 iences he an SED the SED

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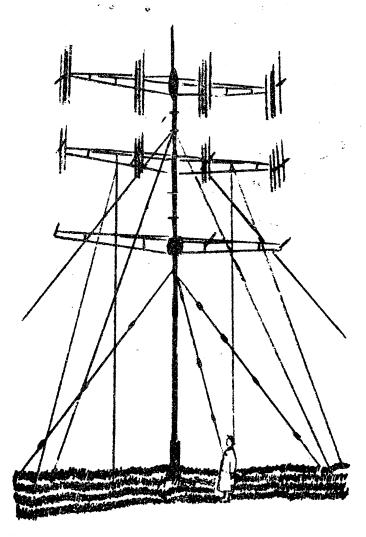
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## Annex 1



Directional Antenna for the Ultra Short Wave Experimental Circuit at Adlerahof

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